1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Currently Amended) A method for determining a number of receptors on a carrier, comprising the steps of:

~~(a)~~ preparing a carrier;

~~(b)~~ immobilizing at least one receptor on the carrier, where~~with~~ the at least one receptor ~~having the ability to~~ interacts with a ligand to form a receptor-ligand complex;

~~(c)~~ after immobilization of the at least one receptor on the carrier, bringing a marker in contact with the receptor to form a receptor-marker complex with separable binding between the receptor and the marker; and

~~(d)~~ determining the number of the receptors on the carrier by detecting the receptor-marker complexes;

where the receptor-marker complexes are detected independently of the receptor-ligand complexes.

28. (Currently Amended) The method of claim 27, further comprising the step of:

(i) bringing the receptor in contact with a test sample and examining the test sample ~~that is to be examined~~ for its content of ligands.

29. (Previously Presented) The method of claim 28, further comprising the step of:

(ii) following step (i), detecting the receptor-ligand complexes.

30. (Currently Amended) The method of claim 27, where the carrier is a semiconductor having ~~with~~ a surface formed ~~comprised~~ of a material, where the material comprises ~~from the group comprising~~ silicon, a semimetal oxides~~, including SiO_x, and~~or aluminum oxide.

31. (Currently Amended) The method of claim 27, where the receptor comprises ~~is selected from the group comprising~~ antibodies including monoclonal or polyclonal antibodies and functional fragments thereof, proteins, oligo- and polypeptides, nucleic acids including DNA, RNA, cDNA, PNA, oligo- and polynucleotides~~;~~, ~~and~~ or saccharides including mono-, di-, tri-, oligo-, and polysaccharides.

32. (Previously Presented) The method of claim 27, where a binding between the receptor and the ligand in the receptor-ligand complex is separable.

33. (Currently Amended) The method of claim 27, where a binding between the receptor and the ligand in the receptor-ligand complex has a fluorescence half-life ~~in a range of~~measured in nanoseconds~~at least microseconds~~.

34. (Currently Amended) The method of claim 27, where on average there are an equal number of the ~~n~~ markers and ~~are associated with n~~ the receptors.

35. (Previously Presented) The method of claim 27, where the marker comprises reactive groups.

36. (Currently Amended) The method of claim 27, where the marker comprises ~~a dye from the group comprising~~ a luminescent dye, a chemoluminescent dye, a photoluminescent dye, or~~and~~ a bioluminescent dye.

37. (Currently Amended) The method of claim 27, where the marker comprises a fluorescent dye from the group that comprises~~ing~~ a fluorochrome, a rhodamine, or ~~and~~ tetramethylrhodamine isothiocyanate.

38. (Previously Presented) The method of claim 27, where the receptor comprises inherent fluorescence.

39. (Previously Presented) The method of claim 38, where the inherent fluorescence is provided by amino acid tryptophan.

40. (Currently Amended) The method of claim 38, where the binding between the receptor and the marker in the receptor-marker complex has a fluorescence half-life ~~in a range of~~ measured in nanoseconds.

41. (Previously Presented) The method of claim 27, where the receptor-marker complex includes fluorescence resonance energy transfer.

42. (Previously Presented) The method of claim 41, where the fluorescence of the fluorescence resonance energy transfer is modified by an interaction of the ligand with the receptor.

43. (Previously Presented) The method of claim 41, where the receptor has a donor and an acceptor of the fluorescence resonance energy transfer.

44. (Previously Presented) The method of claim 41, where the fluorescence is produced by a donor and the fluorescence is quenched by an acceptor.

45. (Previously Presented) The method of claim 41, where the ligand acts as a donor of the fluorescence resonance energy transfer.

46. (Previously Presented) The method of claim 41, where the ligand brings a donor and an acceptor of the fluorescence resonance energy transfer directly into contact.

47. (Currently Amended) The method of claim 41, where the ligand is fluorescence-labeled ~~ligands are used~~.

48. (Previously Presented) The method of claim 27, where the marker is a microparticle.

49. (Currently Amended) A method for determining a number of receptors, comprising the steps of:

~~(a)~~ preparing a semiconductor carrier;

~~(b)~~ immobilizing at least one receptor on the carrier, where ~~with~~ the at least one receptor ~~having the ability to~~ interacts with a ligand to form a receptor-ligand complex;

~~(c)~~ after immobilization of ~~at~~ the at least one receptor on the carrier, bringing a marker in contact with the receptor to form a receptor-marker complex with separable binding between the receptor and the marker; and

~~(d)~~ determining the number of receptors on the carrier by detecting the receptor-marker complexes;

where~~in~~ the receptor-marker complexes are detected independently of the receptor-ligand complexes, and where the marker comprises~~ing~~ a dye.

50. (Currently Amended) A method for determining a number of receptors on a carrier, comprising the steps of:

immobilizing a receptor on the carrier;

after the immobilizing step, bringing a marker in contact with the receptor to form a receptor-marker complex;

detecting the receptor-marker complexes; and

determining the number of the receptors on the carrier from the detected receptor-marker complexes.

51. (Previously Presented) The method of claim 50, comprising preparing the carrier prior to the step of immobilizing.

52. (Cancelled)

53. (Cancelled)

54. (Currently Amended) The method of claim 50, further comprising ~~the steps of~~ bringing the receptor in contact with a test sample, examining the test sample ~~to be examined~~ for its content of ligands, and detecting receptor-ligand complexes.